

Engineering establishes new Advanced Development Office

The Engineering Directorate this week announced creation of an Advanced Development Office to focus and consolidate advanced development project planning and implementation.

The Technology and Project Implementation Office was abolished and replaced by the new office.

"This office will be responsible for providing leadership in establishing human space exploration road maps and supporting technology plans in coordination with other center

and agency organizations," said Engineering Director Leonard Nicholson. "Advanced projects within this office include the Experimental Crew Return Vehicle Office, or X-CRV, which is under development, and the Orbiter Upgrade and Human Lunar Return projects which are in the definition phase."

Other responsibilities include technology program definition and system engineering and integration for major advanced development projects, Nicholson said.

Elric McHenry has been assigned in a dual

capacity as manager of the Advanced Development Office and manager of the Human Lunar Return Project Office.

"Advanced projects leads the way to future lunar space flight," McHenry said. "X-CRV development is demonstrating innovative approaches to buildup and testing new spacecraft with shorter development schedules and much lower costs. Other advanced projects and technology development efforts will lay the ground work for the next phase of space exploration in the early 21st century."

John Muratore is deputy manager of the Advanced Development Office and manager of the X-CRV Project Office. Claude Graves will be assistant manager of the Advanced Development Office and acting manager of the System Engineering and Integration Office. Ronald Kahl will be manager of the Technology Planning Office and Lili Moore, deputy chief of Engineering's Propulsion and Power Division, will serve in a dual capacity as manager of the Orbiter Upgrade Project Office.

NASA changes travel policies

JSC employees are now dealing with two new NASA policy changes regarding official government travel.

The General Services Administration revised the reimbursement amounts allowed when employees use of a privately owned vehicle. If employees use their own automobile, the reimbursement is .31 cents per mile and .25 cents per mile for motorcycles. Employees who use their own airplane will receive a reimbursement of .85 cents per mile.

The second policy change increases the receipt requirement for many travel expenses to \$75 from \$25. JSC travelers may claim up to \$75 on a travel voucher without submitting a supporting receipt. Items such as ATM fees, gas receipts for rental cars, personnel telephone calls, taxicabs, parking fees and actual subsistence meals will no longer require a receipt. Receipts are still required for all lodging, transportation changes and miscellaneous expenses in the Financial Management Manual 9772-5.

Employees with questions regarding these changes may call Nancy Porter at x34011.

Lucid begins new projects

(Continued from Page 1)

well as gather data on experiments she has already been performing.

This week, Lucid and her crewmates, Commander Yuri Onufrienko and Flight Engineer Yuri Usachev, continued work on the Candle Flame in Microgravity investigation. The CFM experiment studies how candles burn in space and looks at how the flames react in microgravity environments. This experiment has been particularly interesting for the Mir crew, as Lucid explained during Monday's interview.

"It has been very fascinating because we have been able to make a lot of visual observations and see what is going on," Lucid said. "That is another important lesson. The people who are working on the space station need to be able to have interaction with the experiments that they are doing."

The sixth scheduled session for the Anticipatory Postural Activity investigation was successfully completed last week. That session fulfilled the performance requirements for POSA, however, additional sessions are now being planned due to the increased time of the mission.

Two chamber tests set for next year

(Continued from Page 1)

purier than city air as far as pollution goes," he said.

The test is the second phase of the Advanced Life Support Program's Early Human Testing Initiative. Mechanical and chemical means were used to recycle all air and water, including urine, for the four people in the chamber. This test follows a two-week, one-person test conducted in August 1995 that used a crop of wheat plants to recycle the test subject's breathing air. Next year two more tests—one lasting 60-days, another lasting 90-days—will be conducted with a final test in 2005 that will recycle solid waste as well as air and water.



JSC Photo by Robert Markowitz

INCAN INTERPRETATION—The cultural group, "Allpanchis," performs native South American music for the lunch crowd in the Bldg. 3 cafeteria. The group specializes in sounds that reflect the cultural heritage of the native Indian, or Incas, and the coastal regions of Colombia with contemporary sounds of salsa and merengue mixed in.

American Express to report delinquent employee accounts

The coordinator of JSC's credit card program for travelers reports that American Express has begun exercising its contract option to report delinquent government cardholders to national credit reporting bureaus.

The cardholder accounts that are being reported are those that are at least 120 days delinquent, have been canceled and have balances greater than \$100.

In an attempt to help cardholders avoid such bad marks on their records, American Express will send letters to all cardholders that fall into this category notifying them of the delinquent account and extending them a 45-day grace period. Letters also will be sent to cardholders when accounts are 75 and 90 days past due.

All government cardholders will be notified of the credit reporting policy through an article from American Express in the Cardholder

Newsletter Dispatch. The article will clearly define the criteria for credit bureau reporting, as well as provide ways to avoid the problem.

Cardholders are reminded of the agreement signed when applying for the government American Express Card. Only official travel and official travel-related expenses away from your official duty station, including lodging, meals and incidentals, are to be charged to the card. Cash travel advances taken from automated teller machines may not be withdrawn earlier than three days prior to departure and no later than the last day of travel. The card is not to be used for personal purposes.

Cardholders who have delinquent accounts caused by extenuating circumstances should contact the JSC American Express Program Coordinator, Nancy Porter, at x34011 for assistance in avoiding credit bureau reporting.

In flight maintenance group hangs plaque

Jeff Stone of the In-flight Maintenance group in the Mission Operations' Systems Division was chosen to hang the STS-78 mission plaque.

"Jeff and the rest of the IFM group were recognized for their outstanding efforts during STS-78 to develop and verify procedures that fixed four different pieces of hardware," said Lead Flight Director John Shannon.

The IFM team worked with Marshall to provide an oxygen source to astronauts participating in the Astronaut Lung Function Experiment, bypass a shorted connector in the Bubble Drop and Particle Unit, secure a backrest on the Torque Velocity Dynamometer, and repair a test sample for the Advanced Gradient Heating Facility, Shannon said.

"Stone and the rest of the IFM team directly contributed to the accomplishment of all of the pre-planned science objectives and the decision to extend the flight to a 17th day," Shannon said. Other IFM team members were Paul Lloyd, Randy Barckholtz, Victor Lucas, Ronnie Rogers, and John Shimp.



Stone

Fun run to close some streets

Traffic on JSC streets will be restricted Saturday for the 18th annual Loral Lunar Rendezvous Run.

JSC employees planning to work Saturday morning should be aware that Second St., from the Gilruth Center to Avenue B, and portions of Avenue B and Fifth St. will be closed from approximately 7:15 a.m. to 9 a.m. Access to and from parking lots along these streets may be restricted during this time.

The 18th annual Loral Lunar Rendezvous Run will start at 7:15 a.m. Saturday at the Gilruth Center with a 5-kilometer race and a 5-kilometer walk. Runners may register on race day.

Entry fee for the race is \$18 and includes T-shirts and refreshments for all participants. All entrants will be eligible for door prizes. For more information, contact Willie Vanderbrink, race director, at 470-6715.

Rookies to fly on STS-84

(Continued from Page 1)

Jerry Linenger, scheduled to arrive at Mir in January during the STS-81 mission. Linenger will return to Earth on board *Atlantis* as a member of the STS-84 crew.

Collins, 39, will be making her second journey into space; Noriega, 36, and Lu, 33, will be making their first flights; and Clervoy, 37, flew previously on *Atlantis* during STS-66. Foale, 39, has spent the past year in Russia training for his stay on board Mir. He has three previous space flights to his credit.

Atlantis will carry the Spacehab double module and will remain docked with Mir for five days, transferring supplies and experiments between the two spacecraft in addition to the astronaut exchange.

Galileo images show volcanic, tectonic activity

(Continued from Page 1)

a small portion of the data gathered and returned from the Ganymede flyby and mark the start of a steady stream of images and other information to be returned from Galileo over the next 18 months.

The data were returned using new software radioed to the spacecraft earlier this year that allows Galileo to send back its scientific findings in shorthand form. This helps compensate for the loss of the use of Galileo's high-gain antenna and allows Galileo to return its findings via the smaller low-gain antenna also on the spacecraft.

These first images show two of the regions selected for close photographic study. The areas, called Galileo Regio and Uruk Sulcus, show ancient cratered ice fields adjacent to or overlain by younger ice, volcanic plains, ridged ice mountains, deep furrows and smooth broad basins that are products of tectonic forces. Half of Ganymede's older surface appears to have been resurfaced by younger

volcanic and tectonic activity.

"These images reveal fundamental details about how features seen by Voyager formed and show us age relationships and sequences that turn our previous thinking upside down," said imaging team member James Head of Brown University. The discovery of Ganymede's magnetosphere was made by space physicists using data from Galileo's plasma wave spectrometer and from the magnetometer.

Both instruments were sending data to Earth during the Ganymede flyby while recording even more detailed information to be returned later this month. The plasma wave spectrometer also showed that the densities of charged particles around Ganymede increased by a factor of more than 100 near Galileo's closest approach.

"This indicates that Ganymede is surrounded by a thin ionosphere," said Donald Gurnett of the University of Iowa and principal investigator on the plasma wave spectrometer. "The existence of an

ionosphere suggests that Ganymede also probably has a tenuous atmosphere."

As the spacecraft approached Ganymede, the magnetometer found the measured field was as expected at that position in Jupiter's powerful field—fairly uniform and pointed in a southerly direction. But as the spacecraft crossed into the region where the plasma wave spectrometer sensed signals characteristic of a magnetosphere, the field increased in strength by a factor of nearly five and abruptly changed direction to "point" at Ganymede itself, said Margaret Kivelson of UCLA, principal investigator of the magnetometer experiment. Taken together, these two measurements strongly suggest that Ganymede is the first known moon with its own magnetosphere and the first example ever seen of a "magnetosphere within a magnetosphere."

"We knew Ganymede was an interesting place," said Johnson. "What we have just found makes it even more exciting."

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